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NEVADA DIVISION OF ENVIRONMENTAL PROTECTION FACT SHEET

(pursuant to NAC 445A.236)

Permittee: West Wendover Recreation District
PO Box 2290
Wendover, Nevada 89883

Permit Number: NEV2006510

Discharge Location:

Toana Vista Golf Course
2319 Pueblo Blvd.
Wendover, Elko County, Nevada 89883

Section 17 and 18, Township 33 North, Range 70 East
Latitude: 40° 44' 15" N; Longitude: 114° 5' 4" W
(Golf Course Club House)

Flow: 1.0 million gallons per day as the 30-day average
460 Acre-Feet per year (150 million gallons per year)

General:

Toana Vista is a 110 acre, 18 hole golf course located within the City of Wendover, Nevada at 2319 Pueblo Blvd. The course receives secondary-treated, disinfected wastewater from the West Wendover Wastewater Treatment Plant (WWWTP, Permit #NEV10019) for spray irrigation of the golf course roughs, fairways and greens. Reclaimed water provides 99% of the golf course's irrigation requirements during a typical year, with the irrigation season being from March to October of each year. Reclaimed wastewater is pumped from the WWWWTP to four storage tanks that are located adjacent to the golf course maintenance shops. From the tanks, the water gravity flows through a man-made creek into the upper irrigation pond (pond #1). The level of this pond is controlled by a manual weir by adjusting boards at the weir which sets the maximum level of the pond allowing excess water to gravity flow via an underground 10 inch PVC pipeline to the lower irrigation pond (pond #2). The golf course is irrigated using water from pond #1 and pond #2 only, using booster pumps located in pump houses adjacent to each pond. Additionally there are four (4) ponds which are for decorative purposes only. These ponds are manually filled as needed by golf course staff using the irrigation system. At present Toana Vista discharges to groundwaters of the State via percolation as part of the WWWWTP permit. Upon issuance, Toana Vista will operate as a separate entity under its own permit.

Discharge Characteristics:

At a minimum, effluent used for irrigation is treated to meet secondary standards, and is disinfected with hypochlorite solution. Data on file for the period January 2005 to March 2006 reports effluent characteristics as follows in Table 1 below (treated effluent water quality data is supplied by the WWWWTP):

Table 1

Parameter	Permit Limits	Average (1/05 to 3/06)
CBOD ₅	30 mg/L	2.4 mg/l
TSS	30 mg/L	1.9 mg/l
pH	6.0-9.0 S.U.	7.3 S.U.
Total Nitrogen as N	Monitor & Report	14.0 mg/l
Fecal Coliform	2.2 MPN/100ml	<1.0 cfu/100 ml

Receiving Water Characteristics:

D R A F T

The receiving water body for treated effluent is groundwater of the State of Nevada during months in which golf course irrigation is occurring. Groundwater depth and quality beneath the golf course is not determined at this time. However, soil borings were performed during the construction of the storage lagoons, and groundwater beneath the lagoons was observed at 7-8 feet below ground surface. It is presumed that this groundwater is of poor quality due to high Total Dissolved Solids (TDS). West Wendover is located on the shoreline of Ancient Lake Bonneville (now the Bonneville Salt Flats). Evaporation of the lake resulted in soils with moderate to high salt content. Municipal water for West Wendover is pumped from as far away as 25 miles from several municipal wells and a developed spring.

Proposed Limitations:

Proposed limitations are set to verify the constituent composition of effluent discharges and control application and operational parameters to protect groundwater conditions.

During the period beginning on the effective date of this permit and lasting until the permit expires, the Permittee is authorized to discharge treated wastewater effluent for irrigation of the Toana Vista Golf Course.

The discharge shall be limited and monitored by the Permittee* as specified in Table 2 below:

Table 2

Parameters	Discharge Limitation		Monitoring Requirements	
	30-Day Average	Daily Maximum	Measurement Frequency	Sample Type
Flow (MGD) ¹	1.0	1.0	Continuous	Flow Meter
Annual Treated Effluent Application Volume	460 Acre-Feet Volume determined from Consumptive Use Balance ¹		Cumulative Total for the Year to Date	Flow Meter
BOD ₅ mg/L	30	45	Twice/Month	Composite
TSS mg/L	30	45	Twice/Month	Composite
Fecal Coliform ² (cfu or mpn)	2.2 /100 ml	23 /100 ml	Weekly	Discrete
Total Nitrogen as N (mg/L)	Monitor & Report	Monitor & Report	Quarterly	Discrete
Total Nitrogen as N (lbs.) ³	Calculate & report yearly nitrogen application rate in 4 th quarter DMR. Total Nitrogen-N (lbs) applied shall not be greater than the agronomic (e.g., golf course grass) uptake rate.		4 th Quarter	Nitrogen Mass Balance

* Measurements and analyses may be obtained from the WWTP, where available, but must be reported in the Quarterly DMRs by the Permittee

** Report agronomic uptake rate, as stated in the EMP, in the 4th Quarter DMR.

1. The yearly effluent application rate shall not exceed that specified in the Effluent Management Plan for the type of vegetation being irrigated considering soil permeability, plant uptake with leaching fraction or nitrogen loading, whichever governs.
2. Fecal coliform testing shall be performed weekly during effluent reuse periods at the reuse site. The fecal coliform count is to meet Category "B" treated effluent requirements specified in NAC 445A.276.
3. The total pounds of nitrogen applied shall not be greater than the total pounds of nitrogen uptake. The calculations and/or monitoring shall include the total nitrogen in the applied wastewater, total nitrogen from fertilizer applications, nitrogen uptake by the grass and plants, evapotranspiration rate, precipitation rate and fraction of applied nitrogen removed by denitrification and volatilization. An annual report shall be submitted in the fourth quarter of every year, which demonstrates compliance with this limitation.

Schedule of Compliance:

The Permittee shall implement and comply with the provisions of the following schedule of compliance after approval by the Administrator, including in said implementation and compliance, any additions or modifications which the Administrator may make in approving the schedule of compliance.

- o The Permittee shall achieve compliance with the effluent flow monitoring requirements upon issuance of the permit.
- o The Permittee shall submit current cross-connection control documentation as required by part I.A.12 in permit **within 30 days of permit issuance (September 27, 2006)** and annually thereafter, due with the fourth quarter report. The cross-connection control inspection shall be conducted by an American Water Works Association certified cross connection control

D R A F T

specialist. In conjunction with this inspection, the Permittee shall perform appropriate testing of backflow prevention assemblies conducted by an American Water Works Association certified cross connection control specialist.

- **Within 120 days of permit issuance (December 26, 2006),** the Permittee shall submit for approval a revised Effluent Management Plan (EMP) prepared by a qualified professional. The EMP shall address the following:
 - **Information required to comply with permit:** The Permittee shall prepare the EMP in accordance with *WTS-1B: General Criteria for preparing an Effluent Management Plan*.
 - **Nitrogen Balance:** The Permittee must include in the nitrogen balance equations any addition of fertilizers as well as the nitrogen content of the reclaimed wastewater.
 - **Groundwater monitoring wells:** The Permittee shall submit for approval a plan for the installation of groundwater monitoring wells (one up-gradient (Monitoring Well #1 (MW-1)) and two down-gradient (Monitoring Wells #2 and #3 (MW-2 and MW-3)) of the re-use site). The plan shall be prepared in accordance with *WTS-4: Guidance Document For Design of Groundwater Monitoring Wells (revised 1996)*. The plan shall include a schedule indicating when the monitoring wells will be installed. The monitoring of these wells shall be included in the revised EMP as required above.

Groundwater Monitoring:

After the groundwater monitoring wells have been installed they shall be measured and sampled as specified in Table 3 below:

Table 3

Parameter	Groundwater Limitation	Sample Locations	Monitoring Requirements	
			Measurement Frequency	Sample Type
Depth to Groundwater (feet; bgl)	Monitor & Report	MW-1, MW-2, MW-3	Quarterly	Discrete Measurement
Groundwater Elevation (amsl)	Monitor & Report	MW-1, MW-2, MW-3	Quarterly	Discrete Measurement
Groundwater Gradient and Flow Direction (ft/ft, compass direction)	Report	-----	Annually	Calculate & Illustrate
Total Nitrogen as N (mg/L)	10.0	MW-1, MW-2, MW-3	Quarterly	Discrete
Nitrate as N (mg/L)	10.0 ¹	MW-1, MW-2, MW-3	Quarterly	Discrete
Total Dissolved Solids (mg/L)	Monitor & Report	MW-1, MW-2, MW-3	Quarterly	Discrete
Chloride (mg/L)	Monitor & Report	MW-1, MW-2, MW-3	Quarterly	Discrete

bgl: below ground level amsl: above mean sea level ft/ft: foot per foot (vertical to horizontal)
mg/L: milligrams per liter as N: as Nitrogen

¹: If the nitrate as N concentrations measured in the groundwater increase as a result of effluent re-use to:

- i. 7.0 mg/L, the Permittee shall revise the EMP to provide management practices which increase the nitrogen uptake by vegetation and/or adjust other nitrogen sources such as fertilizer application rates.
- ii. 9.0 mg/L, the Permittee shall execute all corrective action necessary to ensure no further degradation of groundwater.
- iii. 10.0 mg/L, the Permittee shall discontinue the use of reclaimed wastewater and discharge to groundwater shall cease, unless otherwise authorized by the Division.

D R A F T

It shall be the responsibility of the Permittee to determine the cause of the increase in nitrate measurements.

Procedures for Public Comment:

The Notice of the Division's intent to issue a permit authorizing the facility to discharge to the groundwater of the State of Nevada subject to the conditions contained within the permit, is being sent to the **Elko Daily Free Press** for publication. The notice is being mailed to interested persons on our mailing list. Anyone wishing to comment on the proposed permit can do so in writing for a period of 30 days following the date of publication of the public notice. All comments must be received by **5:00 PM Month XX, 2006**. The comment period can be extended at the discretion of the Administrator.

A public hearing on the proposed determination can be requested by the applicant, any affected State, any affected interstate agency, the Regional Administrator or any interested agency, person or group of persons. The request must be filed within the comment period and must indicate the interest of the person filing the request and the reasons why a hearing is warranted. Any public hearing determined by the Administrator to be held must be conducted in the geographical area of the proposed discharge or any other area the Administrator determined to be appropriate. All public hearings must be conducted to accordance with NAC 445A.238. The final determination of the Administrator may be appealed to the State Environmental Commission pursuant to NRS 445A.605.

Proposed Determination:

The Division has made the tentative determination to issue the proposed permit for a period of five years.

Rationale for Permit Requirements:

FLOW: Flow is limited by the volume of treated effluent requested for application, and as long as the nitrogen budgets presented in the approved EMP are observed and annually balanced, the flow rate or volume of water requested can be authorized.

FECAL COLIFORM: The concentration of fecal coliform in treated wastewater discharged for irrigation is restricted in accordance with NAC 445A.276 for a zero-distance buffer zone. The limit of 2.2 cfu/100 ml is met by WWWT.

TOTAL NITROGEN: A nitrogen budget will be conducted each year as part of the effluent management plan (EMP). This budget will help to control the amount of nitrogen entering the subsurface.

NITRATE: The nitrate concentration in applied effluent is a monitor and report requirement to track this fraction of the total nitrogen mass applied to the site for purposed of evaluating groundwater conditions. Should the nitrate concentrations in the groundwater begin to exhibit an increasing trend, further examination of nitrate concentrations in the effluent and how applications rates affect the groundwater may be required.

MONITORING WELLS: Monitoring wells are needed because the reclaimed wastewater is not denitrified and to ensure that the application of the reclaimed wastewater does not degrade the groundwater of the State.

TSS and CHLORIDE: These parameters are monitored to ensure that the groundwater of the State is not degraded.